

ABSTRACT

A fluorescence spectrophotometer having an excitation double monochromator, a coaxial excitation/emission light transfer module, and an emission double monochromator. Each monochromator includes a pair of holographic concave gratings mounted to precisely select a desired band of wavelengths from incoming broadband light without using other optical elements, such as mirrors. Selected excitation light is directed into a sample well by a light transfer module that includes a coaxial excitation mirror positioned to direct excitation light directly to the bottom of a well of a multi-well plate. Fluorescence emission light that exits the well opening is collected by a relatively large coaxial emission mirror. The collected emission light is wavelength selected by the emission double monochromator. Selected emission light is detected by a photodetector module.